

WHAT IS CLAIMED IS:

1 1. A driver comprising switching circuitry referenced to a voltage level and configured to
2 provide a drive signal for a switch referenced to another voltage level and subject to a control
3 voltage limit.

1 2. The driver as recited in Claim 1 wherein said switching circuitry is referenced to a
2 ground potential and said switch is referenced to about five volts.

1 3. The driver as recited in Claim 1 wherein said switch is a metal oxide semiconductor field
2 effect transistor (MOSFET) referenced to said another voltage, said switching circuitry
3 configured to provide a gate drive signal for said switch within a gate voltage limit thereof.

1 4. The driver as recited in Claim 1 wherein said switching circuitry comprises a plurality of
2 driver switches couplable to ground and referenced to a ground potential and said switch is
3 couplable to a source of electrical power and referenced to said another voltage level provided
4 therefrom, ones of said plurality of driver switches being couplable to said ground, said source of
5 electrical power and a bias voltage source for providing a bias voltage, ones of said plurality of
6 driver switches configured to cooperate to provide said drive signal referenced to said another
7 voltage and within said control voltage limit of said switch.

1 5. The driver as recited in Claim 1 wherein said switching circuitry comprises at least one
2 driver switch configured to enable a mode of operation wherein said drive signal for said switch
3 is referenced to said voltage level.

1 6. For use with a power converter couplable to a source of electrical power adapted to
2 provide an input voltage thereto, said power converter including a power train having a switch
3 referenced to said input voltage and subject to a control voltage limit, a driver, comprising:
4 switching circuitry referenced to a voltage level different from said input voltage and
5 configured to provide a drive signal for said switch within said control voltage limit of said
6 switch.

1 7. The driver as recited in Claim 6 wherein said input voltage is about five volts and said
2 switching circuitry is referenced to a ground potential.

1 8. The driver as recited in Claim 6 wherein said switch is a metal oxide semiconductor field
2 effect transistor (MOSFET) referenced to said input voltage, said switching circuitry configured
3 to provide a gate drive signal for said switch within a gate voltage limit thereof.

1 9. The driver as recited in Claim 6 wherein said switching circuitry comprises a plurality of
2 driver switches couplable to ground, ones of said plurality of driver switches being couplable to
3 said ground, said source of electrical power and a bias voltage source for providing a bias
4 voltage, ones of said plurality of driver switches configured to cooperate to provide said drive
5 signal referenced to said input voltage and within said control voltage limit of said switch.

1 10. The driver as recited in Claim 6 wherein said switching circuitry comprises at least one
2 driver switch configured to enable a mode of operation wherein said drive signal for said switch
3 is referenced to said voltage level.

- 1 11. For use with a power converter couplable to a source of electrical power adapted to
2 provide an input voltage thereto, a method of driving a switch of said power converter referenced
3 to said input voltage and subject to a control voltage limit, comprising:
4 providing a drive signal for said switch within said control voltage limit of said switch
5 with switching circuitry referenced from a voltage level different from said input voltage.
- 1 12. The method as recited in Claim 11 wherein said input voltage is about five volts and said
2 switching circuitry is referenced to a ground potential.
- 1 13. The method as recited in Claim 11 wherein said switch is a metal oxide semiconductor
2 field effect transistor (MOSFET) referenced to said input voltage, said switching circuitry
3 providing a gate drive signal for said switch within a gate voltage limit thereof.
- 1 14. The method as recited in Claim 11 wherein said switching circuitry comprises a plurality
2 of driver switches couplable to ground, ones of said plurality of driver switches being couplable
3 to said ground, said source of electrical power and a bias voltage source for providing a bias
4 voltage, ones of said plurality of driver switches cooperating to provide said drive signal
5 referenced to said input voltage and within said control voltage limit of said switch.
- 1 15. The method as recited in Claim 11 further comprising enabling a mode of operation
2 wherein said drive signal for said switch is referenced to said voltage level.

1 16. A power converter couplable to a source of electrical power adapted to provide an input
2 voltage thereto, comprising:

3 a power train including a switch, referenced to said input voltage and subject to a control
4 voltage limit, configured to conduct for a duty cycle and provide a regulated output characteristic
5 at an output of said power converter;

6 a controller configured to provide a signal to control said duty cycle of said switch; and

7 a driver including switching circuitry referenced to a voltage level different from said
8 input voltage and configured to provide a drive signal for said switch within said control voltage
9 limit as a function of said signal from said controller.

1 17. The power converter as recited in Claim 16 wherein said controller is configured to
2 provide a complement of said signal to control said duty cycle of said switch, said driver being
3 configured to provide said drive signal for said switch within said control voltage limit as a
4 function of said complement of said signal from said controller.

1 18. The power converter as recited in Claim 16 wherein said switch is a metal oxide
2 semiconductor field effect transistor (MOSFET) referenced to said input voltage, said switching
3 circuitry configured to provide a gate drive signal for said switch within a gate voltage limit
4 thereof.

1 19. The power converter as recited in Claim 16 wherein said switching circuitry comprises a
2 plurality of driver switches couplable to ground, ones of said plurality of driver switches being
3 couplable to said ground, said source of electrical power and a bias voltage source for providing
4 a bias voltage, ones of said plurality of driver switches configured to cooperate to provide said
5 drive signal referenced to said input voltage and within said control voltage limit of said switch.

1 20. The power converter as recited in Claim 16 wherein said switching circuitry comprises at
2 least one driver switch configured to enable a mode of operation wherein said drive signal for
3 said switch is referenced to said voltage level.